WHAT IS CLAIMED IS:

1. A communication device which controls transmission of packets, comprising:

(a) a transmission testing means for performing a packet route evaluation test, comprising:

test packet generating means for generating a plurality of test packets, one for each route reaching a given destination node, the plurality of test packets including one reference test packet,

transmission time acquisition means for recording reference transmission time at which the reference test packet is transmitted, and measuring transmission times of the other test packets to be transmitted, relative to the reference transmission time,

reception time acquisition means for recording reference reception time at which the reference test packet is received, and measuring reception times of the other received test packets, relative to the reference reception time, and

transport time evaluation means for ranking the plurality of routes in the order of packet transport times thereof, by evaluating the difference between the transmission time and reception time of each test packet; and

(b) packet transmission means for transmitting packets to one of the routes that is selected according to

the result of the packet route evaluation test performed by said transmission testing means.

2. The communication device according to claim 1, wherein:

the plurality of routes are label-switched layer-2 paths that reach the destination node;

said transmission testing means evaluates each of the plurality of label-switched layer-2 paths in term of the packet transport times; and

said packet transmission means transmits IP packets to one of the label-switched layer-2 paths that is selected according to the result of the packet route evaluation test.

3. The communication device according to claim 1, wherein:

said packet transmission means normally chooses the shortest route from among the plurality of routes that exhibits the smallest packet transport time; and

when a failure occurs in the shortest route, or when an excessive traffic increase is observed in the shortest route, said packet transmission means chooses the second shortest route from among the remaining routes as an alternative to the shortest route, and transmits packets to the alternative route.

4. The communication device according to claim 1, wherein:

a loopback path is formed for each route, such that the transmitted test packet will be returned from the destination node thereof;

said transmission testing means evaluates the packet transport time of each route at regular intervals by sending and receiving the test packets through the loopback paths; and

each of the test packets has a data field to carry the reference transmission time or the transmission time, and another data field to carry the reference reception time or the reception time.

5. The communication device according to claim 1, further comprising display control means for displaying a result of the packet route evaluation test performed by said transmission testing means.